What is claimed is:

1. An image forming apparatus comprising:

an image carrier;

an emitting device that emits a laser beam for forming a latent image on said image carrier;

a setting device that sets a modulation coefficient for each of a plurality of segments obtained by dividing a main scan line on said image carrier scanned by the emitted laser beam;

an image clock generating device that generates an image clock signal for controlling emission by said emitting device for each of the segments, based on the modulation coefficient set by said setting device;

a starting end detecting device that detects a starting end of the main scan line;

a terminating end detecting device that detects a terminating end of the main scan line;

a phase difference detecting device that detects a difference in phase between timing of detection of the terminating end by said terminating end detecting device and timing of generation of a last image clock signal for a last segment by said image clock generating device; and

a correction device that corrects the modulation coefficient based on the phase difference detected by said phase difference detecting device.

2. An image forming apparatus as claimed in claim 1, wherein said image clock generating device sequentially generates the image clock signal for each of the segments, the image clock signal having a period calculated by sequentially adding to and subtracting from an initial period thereof a period value based on the modulation coefficient set by said setting device and a period of a reference clock signal according to progression of scanning of the segments;

3. n image forming apparatus as claimed in claim 1, wherein said correction device corrects the modulation coefficient for each of the segments excluding at least segments of the segments corresponding to a time period from timing of detection of the starting end by said starting end detecting device to timing of generation of image clock signals for a predetermined number of pixels by said image clock generating device, based on the phase difference detected by said phase difference detecting device.

4. An image forming apparatus as claimed in claim 1, wherein said correction device further corrects the modulation coefficient for each of the segments excluding at least segments of the segments corresponding to a time period from the timing of detection of the terminating end by said terminating end detecting device to timing of generation of image clock signals for a predetermined number of pixels by

said image clock generating device, based on the phase difference detected by said phase difference detecting device.

5. An image forming apparatus as claimed in claim 1, wherein said correction device corrects the modulation coefficient so as to minimize the phase difference detected by said phase difference detecting device.

6. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects, as the phase difference, a ratio of a count value of the reference clock signal obtained from the timing of detection of the starting end by said starting end detecting device to the timing of detection of the terminating end by said terminating end detecting device, to a count value of the reference clock signal from the timing of detection of the starting end to the timing of generation of the last image clock signal for the last segment by said image clock generating device.

7. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects as the phase difference, a ratio of a count value of the reference clock signal obtained from timing of arrival of a segment next to the segments corresponding to the time period from the timing of detection of the starting end by said starting end

detecting device to the timing of generation of the image clock signals for the predetermined number of pixels by said image clock generating device to the timing of detection of the terminating end by said terminating end detecting device, to a count value count value of the reference clock signal obtained from the timing of arrival of the next segment to the timing of generation of the last image clock signal for the last segment by said image clock generating device.

8. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects the phase difference at each scan of the main scan line, and said correction device corrects the modulation coefficient using a value of the phase difference detected when scanning an immediately preceding main scan line.

9. An image forming apparatus as claimed in claim 8, wherein, when scanning a first main scan line for an image, said correction device corrects the modulation coefficient using a value of the phase difference detected when scanning a last main scan line for an immediately preceding image.

10. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects the phase difference at intervals of a predetermined number of main scan lines less than a total number of main scan lines for a page of images,

and said correction device corrects the modulation coefficient using an immediately preceding detected value of the phase difference until a next value of the phase difference is detected.

11. An image forming apparatus as claimed in claim 10, wherein, when scanning a first main scan line for an image, said correction device corrects the modulation coefficient using a value of the phase difference detected when scanning a last main scan line for an immediately preceding image.

12. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects the phase difference when scanning a first main scan line for each image each time a page of images is formed, and said correction device corrects the modulation coefficient using the detected phase difference when scanning at least second and succeeding main scan lines for the image.

13. An image forming apparatus as claimed in claim 12, wherein, when scanning a first main scan line for an image, said correction device corrects the modulation coefficient using a value of the phase difference detected when scanning a last main scan line for an immediately preceding image.

14. An image forming apparatus as claimed in claim 1, wherein said phase difference detecting device detects the phase difference when scanning first main

scan lines for images at intervals of a predetermined number of images, and said correction device corrects the modulation coefficient using an immediately preceding detected value of the phase difference during image formation until a next value of the phase difference is detected.

15. An image forming apparatus as claimed in claim 14, wherein, when scanning a first main scan line for an image for which a next value of the phase difference is to be detected, said correction device corrects the modulation coefficient by continuing to using a value of the phase difference used heretofore.

16. An image forming apparatus as claimed in claim 1, wherein when a main scan line for an image is added as a first main scan line in an ineffective image region in forming a first page of images, said correction device detects the phase difference when scanning the added main scan line, and corrects the modulation coefficient for a first main scan line in an effective image region based on the detected phase difference.

17. An image forming apparatus as claimed in claim 1, wherein the image forming apparatus has a color image forming function, and comprises a plurality of optical scanner units.

18. An image forming method comprising:

an emitting step of emitting a laser beam for

forming a latent image on a image carrier;

a setting step of setting a modulation coefficient for each of a plurality of segments obtained by dividing a main scan line on said image carrier scanned by the emitted laser beam;

an image clock generating step of generating an image clock signal for controlling emission in said emitting step for each of the segments, based on the modulation coefficient set in said setting step;

a starting end detecting step of detecting a starting end of the main scan line;

a terminating end detecting step of detecting a terminating end of the main scan line;

a phase difference detecting step of detecting a difference in phase between timing of detection of the terminating end in said terminating end detecting step and timing of generation of a last image clock signal for a last segment in said image clock generating step; and

a correcting step of correcting the modulation coefficient based on the phase difference detected in said phase difference detecting step.

19. An image forming method as claimed in claim 18, wherein said image clock generating step sequentially generates the image clock signal for each of the segments, the image clock signal having a period calculated by sequentially adding to and subtracting

from an initial period thereof a period value based on the modulation coefficient set by said setting device and a period of a reference clock signal according to progression of scanning of the segments.

20. An image forming method as claimed in claim 19, wherein said correction step corrects the modulation coefficient for each of the segments excluding at least segments of the segments corresponding to a time period from timing of detection of the starting end in said starting end detecting step to timing of generation of image clock signals for a predetermined number of pixels in said image clock generating step, based on the phase difference detected in said phase difference detecting step.